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Applicant : Michael Eric Flanagan Date: 6/13/07
Serial No. : 10/804,824 Art Unit: 3754
Response to Office Action of February 13, 2007

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1(currently amended). A pipe stopper for inserting within a pipe comprising:

two rigid circular plates;

an outwardly-expandable flexible seal located between peripheral surfaces of the plates;

a projection rigidly secured to or integral with a first of the plates and extending slideably through an aperture defined by the second plate;

a lever pivotable about an axis through the projection;

cam means rigidly secured to or integral with the lever such that said lever is pivotable between a first orientation in which the flexible seal is relatively undistorted and a second orientation in which the cam means force the plates towards each other so as to axially compress and radially expand the seal for engaging with sealing contact with a wall of a pipe; and

a member rigidly secured to or integral with only a part of a remote peripheral surface of one of the plates, said member extending from the plate at a position such that when the pipe

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stopper is located within a pipe said member provides a reactive force to tilting of the pipe stopper from its operative position while said lever is pivoted to its second orientation to expand the flexible seal.

2(original). An expandable pipe stopper according to claim 1, wherein the member is integral with or rigidly secured to the second plate.

3(original). An expandable pipe stopper according to claim 1, further comprising a pivot mechanism about which said lever is pivotable, wherein said projection defines a part of said pivot mechanism defining said axis through the projection, and the distance from the first plate to the axis through the projection is fixed.

4(currently amended). An expandable pipe stopper according to claim 1, wherein said projection defines a pair of recesses concentric with said axis through the projection, and the lever carries two pivot pins each of which has an enlarged head that is adapted to fit in ~~an~~ one of said associated recess recesses.

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5(original). An expandable pipe stopper according to claim 1, wherein said projection defines a pair of recesses concentric with said axis through the projection, each recess having an associated cranked slot, and the lever carries two pivot pins each of which has:

an enlarged head adapted to fit in an associated one of said recesses;

and an eccentric portion configured to (i) slide through one of the cranked slots to install the lever on the projection while the lever is in a third orientation and (ii) resist sliding through the cranked slot when the lever is rotated between the first orientation and the second orientation.

6(original). An expandable pipe stopper according to claim 5, wherein said eccentric portions of said pivot pins have a flat side to provide said eccentric portions with eccentricity.

7(original). An expandable pipe stopper according to claim 1, wherein said projection is a single projection extending along the common axis of said plates.

8(original). An expandable pipe stopper according to claim

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7, wherein said projection and said aperture are configured to prevent relative rotation of said plates.

9(canceled).

10(original). An expandable pipe stopper according to claim 1, wherein said lever is connected to an elongate handle by a hinging mechanism.

11(original). An expandable pipe stopper according to claim 1, wherein said handle is telescopically foldable.

12 through 19(canceled).

20(currently amended). A pipe stopper comprising:

a pair of co-axial plates;

a flexible seal located between the plates, said seal being configured to radially expand for sealing a pipe;

a projection rigidly secured to or integral with a first of the plates and extending slideably through an aperture defined by the second plate;

a cam configured to act on one of the plates to bring said

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plates together to radially expand the flexible seal; and

a ~~pivotaly mounted~~ lever rigidly attached to or integral with
said cam and pivotaly mounted about an axis through the
projection;

and an elongate handle pivotally attached to said lever at a
position remote from said cam, such that said lever is operable by
applying a force along said handle.

21(currently amended). A pipe stopper according to claim 20,
having a means for preventing the angle between the elongate handle
and the lever from opening past a predetermined ~~angled~~ angle.

22(original). A pipe stopper according to claim 21, wherein
said predetermined angle is obtuse to allow the flexible seal of
the pipe stopper to be lowered below ground level and positioned
within a pipe by manual manipulation of said elongate handle.

23(currently amended). A pipe stopper according to claim 20,
wherein said lever comprises a shorter lever secured within a lever
extension arm, and said lever extension arm is pivotally connected
to said handle.

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24(currently amended). An A pipe stopper according to claim 20, wherein said pipe stopper further comprises a contacting member rigidly secured to one of said plates and configured to contact the bore of a pipe to provide a reactive force to tilting the stopper when located within said pipe.

25(currently amended). An expandable pipe stopper according to claim 24, ~~further comprising a projection rigidly attached to or integral with one of said plates,~~

~~wherein said projection is located within an aperture in the other of said plates,~~ said lever is pivotally connected to said projection and said cam acts on the other of said plates.

26(currently amended). A pipe stopper according to claim 1 ~~having a~~ remote installation device ~~for installing an expandable pipe stopper comprising:~~

~~an arm configured to be~~ rigidly attached to a said lever of a said pipe stopper;

an elongate handle connected to said arm by a hinging mechanism; and

a stopping means which prevents the angle between the handle and the member increasing beyond a predetermined value.

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27 and 28 (canceled).

29(new). A pipe stopper for inserting within a pipe comprising:

two rigid circular plates;

an outwardly-expandable flexible seal located between peripheral surfaces of the plates;

a projection rigidly secured to or integral with a first of the plates and extending slideably through an aperture defined by the second plate;

a lever pivotable about an axis through the projection;

cam means rigidly secured to or integral with the lever such that said lever is pivotable between a first orientation in which the flexible seal is relatively undistorted and a second orientation in which the cam means force the plates towards each other so as to axially compress and radially expand the seal for engaging with sealing contact with a wall of a pipe; and

a member rigidly secured to or integral with part of a remote peripheral surface of one of the plates, said member extending from the plate at a position such that when the pipe stopper is located within a pipe said member provides a reactive force to tilting of

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the pipe stopper from its operative position;

wherein said projection defines a pair of recesses concentric with said axis through the projection, and a pair of slots defined in a face of the projection which communicate with a respective one of the recesses, and the lever carries two pivot pins each of which has an enlarged head that is adapted to slide through a respective one of said slots and to fit in an associated one of said recesses.

30(new). An expandable pipe stopper according to claim 29, wherein said projection defines a pair of recesses concentric with said axis through the projection, each recess having an associated cranked slot, and the lever carries two pivot pins each of which has:

an enlarged head adapted to fit in an associated one of said recesses;

and an eccentric portion configured to (i) slide through one of the cranked slots to install the lever on the projection while the lever is in a third orientation and (ii) resist sliding through the cranked slot when the lever is rotated between the first orientation and the second orientation.

31(new). An expandable pipe stopper according to claim 30,

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wherein said eccentric portions of said pivot pins have a flat side
to provide said eccentric portions with eccentricity.